REMARKS

Reconsideration and allowance of the present patent application based on the following remarks are respectfully requested.

By this Amendment, claims 1, 8, 9, 23, 26, 34 and 40 are amended, claims 7, 27, 29 and 46 are cancelled without prejudice or disclaimer to the subject matter therein and claim 47 is newly added. Support for the amendments to the claims can be found throughout the original disclosure. No new matter has been added. Accordingly, after entry of this Amendment, claims 1-6, 8-26, 28-45 and 47 will be pending in the patent application.

As a preliminary matter, Applicant notes that the Examiner's reliance on the combination of over three references (sometimes 4 and 5 references) to reject most of the claims is a clear indication that the claims pending in the present application are in fact not obvious in view of the cited prior art.

In the Office Action, claim 29 was objected to under 37 CFR §1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. In response, claim 29 has been cancelled without prejudice or disclaimer, thus rendering moot the rejection of this claim.

Claims 1-5, 7, 9, 11, 22, 24 and 28-30 were rejected under 35 U.S.C. §102(b) based on U.S. Pub. No. 2002/0105911 to Pruthi *et al.* (hereinafter "Pruthi"). The rejection is respectfully traversed. The rejection is respectfully traversed.

Claims 7 and 29 are cancelled without prejudice or disclaimer, thus rendering moot the rejection of these claims.

Claim 1 has been amended to recite, *inter alia*, that the host memory includes kernel memory space and application memory space and that the step of transferring received data comprises transferring the or each data frame and its attached descriptor to kernel memory space within the host memory and generating offsets such that the data transferred to the kernel space of the host memory is directly accessible to the host application. Applicant respectfully submits that there is no disclosure or suggestion of such a method in any of the references relied upon by the Examiner, let alone in Pruthi.

Furthermore, providing such a method has significant benefits. Reference is made, for example, to the present application at page 27, last paragraph to page 29, last paragraph. Here, there is description of how, with the use of offsets, the ability to reduce copying of data

in the host memory and the consequent CPU time that this would require, the efficiency of a data transfer and network monitoring application can be increased. There is no such disclosure of this in Pruthi.

Pruthi relates to a method for recursively generating statistics corresponding to a plurality of data packets received on and extracted from a first communication line. With reference to, for example, Figure 3 of Pruthi, there is a disclosure of a network monitor 302 comprising first and second interfaces 304 and 306 arranged to receive data from first and second communication lines 308 and 310. Data packets received from the communication lines are stored in a memory 318. A user interface 324 is provided to enable control of the system by a user.

As further explained in Pruthi, the system functions by packetising an incoming bit stream, i.e. decoding the bit stream into packets, and then generating an indexed record for each packet. The indexed record is then stored in memory. As explained in paragraph [0039] of Pruthi, factors such as the time when the network monitor receives an IP packet may be used as the index for each respective IP packet. Further examples of the type of index that might be generated include the type of packet, the size of packet, the packet number, an interface number, an application and an associated session. *See*, for example, the description at paragraph [0046].

The Examiner refers to paragraph [0044] of Pruthi as allegedly disclosing the step of transferring data to a region of host memory directly accessible to a host application. Applicant respectfully disagrees. In fact, here it is merely disclosed that data stored in the memories 508 and 510 may "later be retrieved for analysis or for one of the applications 522 to 530 discussed below". The applications "522 to 530" are shown in Figure 5 and include a display device, router/network management, billing, security and law enforcement and playback. The language of Pruthi which talks about *"retrieval of data for analysis"* or for an application, is clearly not a disclosure of enabling data stored in kernel space in memory to be directly accessed by a host application. It is merely disclosure of stored data being retrieved for use by an application.

In any event, Pruthi does not disclose, teach or suggest, nor any of the cited documents, the generation of offsets that enables data transferred to the kernel space of host memory to be directly accessible to a host application. Therefore, for at least these reasons, claim 1 is novel and non-obvious over Pruthi.

Claims 2-5 are patentable over Pruthi at least by virtue of their dependency from claim 1 and for the additional features recited therein.

Claim 9 is patentable over Pruthi for at least similar reasons as provided above for claim 1 and for the features recited therein. For example, Applicant respectfully submits that there is no disclosure in Pruthi of a writer arranged to write data frames received from the network link to a region of an associated host memory which region is directly accessible to a host application. The reference in Pruthi to data being retrieved for analysis or for one of the applications is certainly not a disclosure of data being directly accessible to a host application when the data is stored within kernel memory of the associated host. Thus, for at least the same reasons as given above with respect to claim 1, claim 9 is novel and non-obvious over Prothi.

Claims 11, 22, 24, 28 and 30 are patentable over Pruthi at least by virtue of their dependency from claim 9 and for the additional features recited therein.

Accordingly, reconsideration and withdrawal of the rejection of claims 1-5, 7, 9, 11, 22, 24 and 28-30 under 35 U.S.C. §102(b) based on Pruthi are respectfully requested.

Claim 6 was rejected under 35 U.S.C. §103(a) based on Pruthi in view of U.S. Pat. No. 5,317,692 to Ashton *et al.* (hereinafter "Ashton"). The rejection is respectfully traversed.

Claim 6 is patentable over Pruthi at least by virtue of its dependency from claim 1 and for the additional features recited therein.

Ashton fails to cure the deficiencies of Pruthi. Ashton was relied upon by the Examiner as allegedly disclosing, teaching or suggesting the features of claim 6. However, Ashton does not disclose, teach or suggest a host memory including kernel memory space and application memory space and the step of transferring received data comprising transferring the or each data frame and its attached descriptor to kernel memory space within the host memory and generating offsets such that the data transferred to the kernel space of the host memory is directly accessible to the host application. Therefore, even assuming, arguendo, Pruthi and Ashton are combinable, which Applicant does not concede, such a combination does not disclose, teach or suggest the features of claims 1 and 6.

Furthermore, Pruthi and Ashton are in different technical fields. Whereas Pruthi relates to monitoring of data on communication lines, Ashton, in contrast, relates to a method and apparatus for transferring data between a host computer and a controller. Therefore,

13

Applicant respectfully submits that it would not have been obvious for one skilled in the art to combine Pruthi and Ashton to arrive at the invention of claim 6.

Accordingly, reconsideration and withdrawal of the rejection of claim 6 under 35 U.S.C. §103(a) based on Pruthi in view of Ashton are respectfully requested.

Claims 8, 10, 12, 14, 23, 26, 27, 31 and 33-39 were rejected under 35 U.S.C. §103(a) based on Pruthi, in view of Ashton, in view of U.S. Pat. No. 5,303,347 to Gagne *et al.* (hereinafter "Gagne"). The rejection is respectfully traversed.

Claim 27 is cancelled without prejudice or disclaimer, thus rendering moot the rejection of this claim.

The Examiner acknowledges that Pruthi does not disclose the feature of adding an indicator in the descriptor associated with a received data frame indicative of the next channel on which the data frame was received so that, when stored in an associated host memory, the indicators can be used to merge data from the first and second channels in a desired order. *See* Office Action at page 6. However, the Examiner objects that Ashton discloses storing an indicator to the next packet and that Gagne discloses use of a next channel indicator. Applicant respectfully disagrees.

First, as noted above, Pruthi and Ashton are in different technical fields. Therefore, it would not have been obvious for one skilled in the art to combine Pruthi and Ashton to arrive at the invention of claim 8.

Second, Gagne does not cure the deficiencies of Pruthi and Gagne. Gagne relates to a method and apparatus for transferring data packets with different attributes from a device interface to buffers in the host memory dedicated to particular attribute values or ranges of values. Referring to Figure 2 of Gagne, plural receive rings 50, 60 and 70 are provided, each being associated with a set of buffers 20, 30 and 40, respectively. When data is received from the network (device interface) 100 it is routed via a "sequencing ring 80" that contains ring entries and includes ring identifiers 81c and 82c which are fields used to indicate which of the receive rings 50, 60 and 70 contain the ring entry corresponding to the next sequentially received packet. Accordingly, this is very different from the invention of claim 8 which recites the addition of an indicator *within a frame descriptor for attachment to a frame* and to enable navigation from frame to frame without access to any external memory or control component. Thus, using the "next channel indicator" bits of claim 8, it is possible

to navigate within the host memory without requiring access to any external component such as the "sequencing ring 80" of Gagne.

In fact, in any event, claim 8 has been amended to recite specifically that the data frames are stored with the associated descriptor. In contrast in Gagne, in as much as there is any disclosure of a "next channel indicator", this is not for storage with the data packet in a memory to enable navigation through the memory. There is clearly no disclosure of such an arrangement in any of the cited prior art and accordingly claim 8 is both novel and non-obvious over the combination of Pruthi, Ashton and Gagne.

Claims 10, 12 and 14 are patentable over Pruthi, Ashton and Gagne at least by virtue of their dependency from claim 8 and for the additional features recited therein.

Claim 23 is patentable over Pruthi for at least similar reasons provided above for claim 1 and for the features recited therein.

Ashton and Gagne fail to cure the deficiencies of Pruthi and Gagne. Applicant respectfully submits that neither Pruthi nor Gagne discloses, teaches or suggests a network analyser card for connection to a host computer, the network analyser card comprising, *inter alia*, "an output generator for transferring data frames and attached meta data to a host buffer associated with the host, in dependence on the meta data attached to the data frames in which the output generator is arranged to transfer the data frames and attached meta data to a region of the host buffer that is directly accessible by a host application." Therefore, claim 23 is novel and non-obvious over the combination of Pruthi, Ashton and Gagne.

Claim 26 is amended to include the feature of previous claim 27. The Examiner objects on page 8 of the Office Action that claim 27 is obvious in view of the combination of Pruthi, Ashton and Gagne. Applicant respectfully disagrees and submits that there is no reason why one skilled in the art would combine Pruthi, Ashton and Gagne to arrive at the invention of claim 26.

As noted previously, Pruthi relates to a method for monitoring data on a communication line. Ashton relates to a method for buffer chaining in a communications controller and Gagne relates to a method of transferring packets with different attributes from a device interface to buffers in a host memory dedicated to particular attribute values or ranges of values. The Examiner indicates that the ring identifiers 81c and 82c are fields which indicate which of receive rings 50, 60 and 70 contain the ring entry corresponding to the next sequentially received packet.

15

However, amended claim 26 recite that the first descriptor adder is configured and arranged to add a descriptor for storage with the respective data frame to at least some of the received frames and that the second descriptor adder is configured and arranged to add a descriptor *for storing with the respective data frame too*. As explained above with respect to new claim 8, there is no disclosure in any of the cited prior art of such an arrangement in which the data frames and their descriptors are stored together in such a way that enables merging (or navigating with respect to new claim 8) of data in a simple and convenient manner as disclosed in the present application. Accordingly, amended claim 26 is novel and non-obvious over the combination of Pruthi, Ashton and Gagne.

With respect to claim 31, the Examiner objects in the paragraph starting at page 5 of the Office Action that claim 31 is obvious over a combination of Pruthi in view of Ashton. As explained above, Pruthi and Ashton are in different technical fields. Indeed, whereas Pruthi relates to monitoring of data on communication lines, Ashton, in contrast, relates to a method and apparatus for transferring data between a host computer and a controller. One skilled in the art would <u>not</u> make the combination that the Examiner is asserting. Furthermore, even assuming *arguendo* Pruthi and Ashton are combinable, which Applicant does not concede, there is no disclosure of reading the descriptor of a first data packet and in dependence on information obtained from the descriptor accessing the subsequent data packet.

Further, the Examiner indicates that the skilled person would have used the "next message pointer" of Ashton in the index field of Pruthi. However, there is no reason at all why one skilled in the art would do this and indeed given that Pruthi is merely a disclosure of a means for monitoring data and gathering statistical information there is no reason why an additional system for adding descriptors in the manner required by claim 31 would be required. Accordingly, even *arguendo* Pruthi and Ashton are combinable, such a combination would not provide the invention of claim 31. Further Gagne fails to remedy the deficiencies of Pruthi and Ashton. Therefore, claim 31 is novel and non-obvious over the combination of Pruthi, Ashton and Gagne.

Claim 34 is patentable over Pruthi, Ashton and Gagne at least by virtue of its dependency from claim 31 and for the additional features recited therein.

Next, the Examiner objects that previous claim 35 is also obvious over a combination of Pruthi, Ashton and Gagne. However, in neither Pruthi nor Ashton is there any disclosure of a merged data stream being created. There is no reason why such a data stream would be

created with respect to either Pruthi or Ashton. Pruthi relates to gathering statistics in dependence on data packets received. The general teaching is of the statistics relating to data received on an individual one of the channels. Indeed, as described in paragraph [0016] of Pruthi, statistics are recursively generated corresponding to a plurality of packets received on the first communication line. There is no disclosure or suggestion of generating a *merged* data stream. Accordingly, any objection of the Examiner is purely hindsight based.

Furthermore, even if one skilled in the art were to make the asserted combination he would not arrive at the subject matter of claim 35. This is because there is also no disclosure in Pruthi, Ashton or Gagne of generating an offset indicative of the location within the memory of a subsequent data packet and writing the offset to a region of the host memory. Accordingly, claim 35 is patentable over Pruthi, Ashton, Gagne and any combination thereof.

With respect to claim 39, the Examiner refers to column 3, line 25 onwards, presumably with respect to the step of generating an offset indicative of the location within the memory of the subsequent data packet. However, what Ashton actually teaches is that the "next message pointer" is in respect of the "next message". In other words, it is not at all concerned with the location of the next "data packet" but rather is merely a way of locating messages within a host memory. Accordingly, the Examiner's assertion that a combination of Pruthi and Ashton would lead the skilled person to the subject matter of claim 39 is incorrect.

Furthermore, the offset referred to in claim 39 is not disclosed anywhere in Pruthi, Ashton or Gagne. An offset is a precise term relating to the relative distance between one memory location and another. In contrast, the "next message pointer" merely is arranged to point to the "first buffer in the linked list containing the next message". In other words, it does not point to a location of the message, but merely identifies the "first buffer" in the list containing the next message. Thus, claim 39 is novel and non-obvious over Pruthi, Ashton, Gagne and any combination thereof.

Claims 36-38 are patentable over the combination of Pruthi, Ashton, Gagne and any combination thereof at least by virtue of their dependency from claim 1 and for the additional features recited therein.

Accordingly, reconsideration and withdrawal of the rejection of claims 8, 10, 12, 14, 23, 26, 27, 31 and 33-39 under 35 U.S.C. §103(a) based on Pruthi, in view of Ashton, in view of Gagne are respectfully requested.

Claim 32 was rejected under 35 U.S.C. §103(a) based on Pruthi, in view of Ashton, in view of Gagne in view of U.S. Pat. No. 5,497,404 to Grover *et al.* (hereinafter "Grover"). The rejection is respectfully traversed.

Claim 32 is patentable over Pruthi, Ashton, Gagne and any proper combination thereof at least by virtue of its dependency from claim 31 and for the additional features recited therein.

Grover fails to cure the deficiencies of Pruthi, Ashton and Gagne. Grover is silent as to a method of navigating through a memory in which data packets are stored, at least some of the data packets including a descriptor containing information about the data packet with which it is associated, the method comprising: reading the descriptor of a first data packet to obtain information about the first data packet; and, in dependence on said information, accessing a subsequent data packet. Therefore, claim 32 is novel and non-obvious over the combination of Pruthi, Ashton, Gagne and Grover.

Accordingly, reconsideration and withdrawal of the rejection of claim 32 under 35 U.S.C. §103(a) based on Pruthi, in view of Ashton, in view of Gagne in view of Grover are respectfully requested.

Claim 13 was rejected under 35 U.S.C. §103(a) based on Pruthi, in view of Ashton, in view of Gagne in view of Tcl Clock, 1996 ("Tcl Clock"), retrieved from the internet <url:http://www.astro.princeton.edu/%7Erhl/Tcl-Tk_docs/tcl/clock.n.html>. The rejection is respectfully traversed.

Claim 13 is patentable over Pruthi, Ashton, Gagne and any proper combination thereof at least by virtue of its dependency from claim 8 and for the additional features recited therein.

Tcl Clock fails to remedy the deficiencies of Pruthi, Ashton and Gagne. Tcl Clock is silent as to a method of transferring multi-channel data received from a network to a host using a network analyzer card, the network analyzer card comprising: a receiver for receiving plural data frames from a network link on a first channel and a receiver for receiving plural data frames from the network link on a second channel; a descriptor adder configured and arranged to add a descriptor to at least some of the data frames received on the first channel and a descriptor adder configured and arranged to add a descriptor to at least some of the data frames received on the second channel, the descriptors including data about the data frame to which it is attached, the method comprising: receiving data from first and

second channels on the receivers of the network analyser card; and, adding an indicator in the descriptor associated with received data frames indicative of the next channel on which a data frame was received, storing the data frames with the associated descriptor, whereby when stored in an associated host memory said indicators can be used to merge data from said first and second channels in a desired order. Therefore, claim 13 is novel and non-obvious over the combination of Pruthi, Ashton, Gagne and Tcl Clock.

Accordingly, reconsideration and withdrawal of the rejection of claim 13 under 35 U.S.C. §103(a) based on Pruthi, in view of Ashton, in view of Gagne in view of Tci Clock are respectfully requested.

Claims 15 and 16 were rejected under 35 U.S.C. §103(a) based on Pruthi, in view of Ashton, in view of Gagne in view of U.S. Pat. No. 4,228,496 to Katzman *et al.* (hereinafter "Katzman"). The rejection is respectfully traversed.

Claims 15 and 16 are patentable over Pruthi, Ashton, Gagne and any proper combination thereof at least by virtue of their dependencies from claim 8 and for the additional features recited therein.

Katzman does not remedy the deficiencies of Pruthi, Ashton and Gagne. Katzman is silent as to a method of transferring multi-channel data received from a network to a host using a network analyzer card, the network analyzer card comprising: a receiver for receiving plural data frames from a network link on a first channel and a receiver for receiving plural data frames from the network link on a second channel; a descriptor adder configured and arranged to add a descriptor to at least some of the data frames received on the first channel and a descriptor adder configured and arranged to add a descriptor to at least some of the data frames received on the second channel, the descriptors including data about the data frame to which it is attached, the method comprising: receiving data from first and second channels on the receivers of the network analyser card; and, adding an indicator in the descriptor associated with received data frames indicative of the next channel on which a data frame was received, storing the data frames with the associated descriptor, whereby when stored in an associated host memory said indicators can be used to merge data from said first and second channels in a desired order. Therefore, claims 15 and 16 are novel and non-obvious over the combination of Pruthi, Ashton, Gagne and Katzman.

Accordingly, reconsideration and withdrawal of the rejection of claims 15 and 16 under 35 U.S.C. §103(a) based on Pruthi, in view of Ashton, in view of Gagne in view of Katzman are respectfully requested.

Claims 17, 18 and 19 were rejected under 35 U.S.C. §103(a) based on Pruthi, in view of Ashton, in view of Gagne in view of Katzman, in view of U.S. Pat. No. 5,859,846 to Kim *et al.* (hereinafter "Kim"). The rejection is respectfully traversed.

Claims 17, 18 and 19 are patentable over Pruthi, Ashton, Gagne, Katzman and any proper combination thereof at least by virtue of their dependencies from claim 8 and for the additional features recited therein.

Kim does not remedy the deficiencies of Pruthi, Ashton, Gagne and Katzman. For example, Kim does not disclose, teach or suggest the features of claim 8. Therefore, claims 17, 18 and 19 are novel and non-obvious over the combination of Pruthi, Ashton, Gagne, Katzman and Kim.

Accordingly, reconsideration and withdrawal of the rejection of claims 17, 18 and 19 under 35 U.S.C. §103(a) based on Pruthi, in view of Ashton, in view of Gagne in view of Katzman, in view of Kim are respectfully requested.

Claims 20 and 21 were rejected under 35 U.S.C. §103(a) based on Pruthi, in view of Ashton, in view of Gagne in view of Katzman, in view of U.S. Pat. No. 4,769,810 to Eckberg *et al.* (hereinafter "Eckberg"). The rejection is respectfully traversed.

Claims 20 and 21 are patentable over Pruthi, Ashton, Gagne, Katzman and any proper combination thereof at least by virtue of their dependencies from claim 8 and for the additional features recited therein.

Eckberg does not remedy the deficiencies of Pruthi, Ashton, Gagne and Katzman. For example, Eckberg does not disclose, teach or suggest the features of claim 8. Therefore, claims 20 and 21 are novel and non-obvious over the combination of Pruthi, Ashton, Gagne, Katzman and Eckberg.

Accordingly, reconsideration and withdrawal of the rejection of claims 20 and 21 under 35 U.S.C. §103(a) based on Pruthi, in view of Ashton, in view of Gagne in view of Katzman, in view of Eckberg are respectfully requested.

Claim 25 was rejected under 35 U.S.C. §103(a) based on Pruthi, in view of U.S. Pat. No. 6,721,872 to Dunlop *et al.* (hereinafter "Dunlop"). The rejection is respectfully traversed.

Claim 25 is patentable over Pruthi at least by virtue of its dependency from claim 23 and for the additional features recited therein.

Dunlop does not remedy the deficiencies of Pruthi. For example, Dunlop is silent as to a network analyser card for connection to a host computer, the network analyser card comprising, *inter alia*, "an output generator for transferring data frames and attached meta data to a host buffer associated with the host, in dependence on the meta data attached to the data frames in which the output generator is arranged to transfer the data frames and attached meta data to a region of the host buffer that is directly accessible by a host application." Therefore, claim 25 is novel and non-obvious over the combination of Pruthi and Dunlop.

Accordingly, reconsideration and withdrawal of the rejection of claim 25 under 35 U.S.C. §103(a) based on Pruthi, in view of Dunlop are respectfully requested.

Claims 40 and 42-46 were rejected under 35 U.S.C. §103(a) based on Pruthi, in view of Eckberg. The rejection is respectfully traversed.

Claim 46 is cancelled without prejudice or disclaimer, thus rendering moot the rejection of this claim.

Claims 40 and 41-45 are patentable over Pruthi at least by virtue of their dependency from claim 9 and for the features recited therein.

Eckberg does not remedy the deficiencies of Pruthi. Eckberg is silent as to a network analyser card, the card comprising: a receiver for receiving plural data frames from a network link; and, a descriptor adder configured and arranged to add a descriptor to at least some of the received data frames, the descriptor including data about the data frame to which it is attached for use in processing of the data frame, and a writer, to write data frames received from the network links to a region of kernel memory of an associated host memory which region is directly accessible to a host application. Therefore, claims 40 and 41-45 are novel and non-obvious over the combination of Pruthi and Eckberg.

Accordingly, reconsideration and withdrawal of the rejection of claims 40 and 42-46 under 35 U.S.C. §103(a) based on Pruthi, in view of Eckberg are respectfully requested.

Claim 41 was rejected under 35 U.S.C. §103(a) based on Pruthi, in view of Eckberg, in view of Ashton. The rejection is respectfully traversed.

Claim 41 is patentable over Pruthi and Eckberg at least by virtue of its dependency from claim 9 and for the features recited therein.

Ashton does not remedy the deficiencies of Pruthi and Eckberg. Ashton is silent as to a network analyser card, the card comprising: a receiver for receiving plural data frames from a network link; and, a descriptor adder configured and arranged to add a descriptor to at least some of the received data frames, the descriptor including data about the data frame to which it is attached for use in processing of the data frame, and a writer, to write data frames received from the network links to a region of kernel memory of an associated host memory which region is directly accessible to a host application. Therefore, claim 41 is novel and non-obvious over the combination of Pruthi, Eckberg and Ashton.

Accordingly, reconsideration and withdrawal of the rejection of claim 41 under 35 U.S.C. §103(a) based on Pruthi, in view of Eckberg, in view of Ashton are respectfully requested.

Claim 47 is newly added to define additional subject matter that is novel and non-obvious over the art of record. Claim 47 is patentable over the art of record at least by virtue of its dependency from claim 31 and for the additional features recited therein.

Applicant has addressed the Examiner's rejections and objection and respectfully submits that the application is in condition for allowance. A notice to that effect is earnestly solicited.

If any point remains in issue which the Examiner feels may be best resolved through a personal or telephone interview, please contact the undersigned at the telephone number listed below.

Please charge any fees associated with the submission of this paper to Deposit Account Number 033975. The Commissioner for Patents is also authorized to credit any over payments to the above-referenced Deposit Account.

Respectfully submitted,

PILLSBURY WINTHROP SHAW PITTMAN LLP

CHRISTOPHER F. LAIR
Reg. No. 54248
Tel. No. 703.770.7797
Fax No. 703.770.7901

JSB/CFL
P.O. Box 10500
McLean, VA 22102
(703) 770-7900